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PLANT IMMIGRANTS.

No. 186. OCTOBER, 1921.

GENERA REPRESENTED IN THIS NUMBER.

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Plates:

291. The babaco, a hardy relative of the papaya - (*Carica sp*).
292. A bearing mangosteen tree near Guayaquil, Ecuador - (*Garcinia mangostana*).

Foreign Seed and Plant Introduction.

EXPLANATORY NOTE.

This circular is made up largely from notes received from our agricultural explorers, foreign correspondents, collaborators, and others relative to the more important plants which have been received recently by the Office of Foreign Seed and Plant Introduction of the Department of Agriculture. In it are also contained accounts of the behavior in America of plants previously introduced.

Descriptions which appear here are revised and published later in the Inventory of Seeds and Plants Imported.

These are ONLY ANNOUNCEMENTS OF THE ARRIVAL OF THE PLANT MATERIAL. With the exception of seed received in quantity, it must be propagated before it is available for the experimenters. This requires from one to four years, depending upon the species and the amount of material imported.

The Annual List of New Plant Introductions which is issued every autumn gives descriptions of the material ready to send out to experimenters. You can apply for any material described in Plant Immigrants and your application will be kept on file and given precedence whenever the material is sent out. If the number of such applications on file is sufficient to exhaust the available supply of any particular plant, it will not be described in the Autumn List of New Introductions.

One of the objects of the Office of Foreign Seed and Plant Introduction is to secure experimental quantities of new or rare foreign seeds or plants for plant breeders and experimenters, and every effort will be made to fill specific requests.

DAVID FAIRCHILD,
Agricultural Explorer in Charge,
Office of Foreign Seed and Plant Introduction.

Issued March 6, 1922. Washington, D. C.

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Ananas sativus (Bromeliaceae), 53990. **Pineapple**. From Ecuador. Collected by Mr. Wilson Popenoe, Agricultural Explorer. "(No. 641.) 'Milagro pineapple.' Plants from the Hacienda Valdez, near Milagro, about 35 miles from Guayaquil.

"The pineapples of Guayaquil have long been famous in tropical America for their superior quality. They are cultivated commercially in the vicinity of Milagro, whence they are brought to the port in large quantities. A few are sent down the coast to Peru. As far as I can see, the variety is either 'Smooth Cayenne' or a very closely allied form. These suckers should be tested in Hawaii and Porto Rico.

"The plant is vigorous, with smooth leaves reaching up to 3 feet in length. The fruits, which sometimes weigh as much as 8 or 10 pounds, but more commonly do not exceed 4 pounds, are oblong to oblong-oval, slightly narrower toward the apex than at the base. When ripe they are green on the surface; the flesh is white, very abundantly juicy, of tender, melting texture, and of delicately aromatic, sweet, very agreeable flavor. This is an excellent pineapple for use as a dessert fruit. I am inclined to think that it may prove to have slightly better shipping qualities than the strain of 'Smooth Cayenne' which has been grown in Florida." (Popenoe.)

Attalea cohune (Phoenicaceae), 54017. **Cohune**. From Stann Creek, British Honduras. Seeds presented by Mr. J. M. Sutton, Washington, D. C., who obtained them from Mr. Maxwell Riddle, American Palm Products Co., Ravenna, Ohio.

"The cohune palm is indigenous in the lowlands of southern Mexico and Central America, where it thrives best in virgin forest lands along rivers and creeks, often forming large groves. It frequently reaches 40 or 50 feet in height, and has a smooth trunk with graceful foliage resembling that of the coconut palm, except that the leaves are much larger and more stiffly erect.

"The most important product of this palm is the nut: these are borne in huge oblong racemes weighing sometimes as much as 100 pounds. In the course of a year single trees may produce as many as three or four of these clusters. Individually the fruits are about the size of hens' eggs; within a rather thin outer covering, which is fibrous and somewhat pulpy, is the hard nut, usually about 2 inches long and an inch in thickness. The kernel is white, firm, and resembles that of the coconut in flavor. From this can be extracted, by

pressure, an excellent white oil which is used in cooking, for soap manufacture, and in various other ways.

"The chief obstacles in the way of obtaining this oil on an extensive or commercial scale are two: the difficulty which has been experienced in perfecting a machine to crack the nuts and remove the kernels, and the expense connected with harvesting the racemes from wild palms scattered over large areas of tropical jungle. Several Americans interested in the exploitation of this plant have worked on machines for cracking the nuts, and in one or two places such machines have been used commercially with a fair degree of success. As to the question of harvesting the nuts economically, I have always felt a bit skeptical. In the first place, it has been my observation that even where the palms occur in great abundance, fruit is not available in enormous quantities because not all of the plants bear regularly. O. F. Cook of this Department has noted, in Guatemala, that some of the palms bear only staminate or male flowers, - a condition borne out by R. Lopez y Parra (La Palma del Coquito de Azeite, Mexico City, 1910); such plants do not, of course, produce any fruit. It has also seemed to me that palms crowded together in the jungle produce relatively few fruits compared to those growing in the open. Good examples of the latter may be seen in the Isthmus of Tehuantepec.

"In southern Mexico this palm is called 'coyoli'; in Guatemala the fruits are known under the name 'corozo,' while the palm, at least when young (during which period the leaves are commonly used for thatching), is called 'manaca.' The name 'coquito' is applied to the nuts in several regions, I believe. It is probable that a more careful study would show that several species of Attalea are represented by the plants popularly referred to *A. cohune* in tropical America." (Wilson Popenoe.)

Capsicum annuum (Solanaceae), 53941. **Red pepper**. From Valencia, Spain. Seeds purchased through Mr. John R. Putnam, American consul. "'Morron.' The variety almost universally employed for the best grades of canned peppers." (Putnam.)

A large, fleshy, sweet, rather coarse variety of pepper suitable for preserving and baking. Because of its attractive appearance this variety is in great demand for export. (Adapted from note of Don Rafael Janini, agronomical engineer, Province of Valencia.)

Catalpa bungei (Bignoniaceae), 53989. From Nanking, Kiangsu, China. Seeds presented by Mr. J. Lossing Buck, acting dean, College of Agriculture and Forestry, University of Nanking. "Seeds collected in the first Kiangsu Provincial Forest Station, Ming Tomb, Nanking. A tree with white, pink-dotted flowers which are edible when cooked; the bark and leaves are used in medicine. The soft, light wood is easily split when newly cut, but durable when thoroughly dried; it is used mostly for building purposes and for making furniture, carts, coffins, window sashes, and for carving. It would probably be valuable for fence posts." (Buck.)

Datura sp. (Solanaceae), 54049. From Ibarra, Ecuador. Seeds collected by Mr. Wilson Popenoe, Agricultural Explorer. "(No. 625a. Hacienda La Rinconada.) 'Huantuc.' A yellow-flowered form of the common arborescent Datura which is cultivated about the huts of the Indians throughout the Ecuadorean highlands. The plant sometimes grows to 15 or 18 feet; its tubular flowers are about 6 inches long, 2 inches broad at the mouth, and of a rich deep-yellow color. The plant is worthy of trial as an ornamental in protected situations throughout southern California, and in southern Florida." (Popenoe.)

Dioscorea batatas (Dioscoreaceae), 54048. **Yam.** From Hereford, England. Tubers presented by Dr. H. E. Durham, Dunelm. "Chappellier." The tubers are club shaped, tapering to a finger size at the upper part, and when grown in the open are generally about 9 to 10 inches long and weigh 12 to 14 ounces when fully grown. Occasionally twin tubers develop on a single plant, but they are then of medium size. This yam may be multiplied either by means of cuttings of the tuber or by means of bulbils. The size of the eventual tuber seems to depend a great deal upon the size of the piece from which the plant was grown. By far the most important mode of multiplication is by bulbils. (Adapted from an article on "The Hardy Yams," by Dr. H. E. Durham, The Gardeners' Chronicle, ser. 3, vol. 69, p. 18.)

"The stem of the vine is roundish; the leaf blade is heart shaped, smooth, upper surface shining, - with reddish purple at base of blade." (R. A. Young.)

Dioscorea esculenta (Dioscoreaceae), 53924. **Lesser Yam.** From Barbados, British West Indies. Tubers presented by Mr. J. R. Bovell, Director of Agriculture. "This Buck yam has a delicious flavor, and persons growing

yams would be well advised to try to obtain a few tubers when the next planting season comes around." (From Report of Department of Agriculture, Barbabos, 1919 and 1920.)

"This is a white-fleshed yam of excellent quality. The skin is smooth and thin, but tough; the variety should be a good shipper. The tubers are cylindrical, and rather small." (R. A. Young.)

Fuchsia sp. (Onagraceae), 53991. From Ecuador. Collected by Mr. Wilson Popenoe, Agricultural Explorer. "(No. 637a. From La Rinconada, Ecuador.) Seeds of 'Zarcillejo.' A half-climbing wild shrub from the mountains of Carchi Province, where it grows at altitudes of 10,000 to 12,000 feet. It bears handsome scarlet flowers about 2 inches long, and should be sufficiently hardy for cultivation in California." (Popenoe.)

Ormosia hosiei (Fabaceae), 54033. From Chungking, Szechwan, China. Seeds presented by Mr. P. R. Josselyn, American consul. "The seeds were secured through the kindness of friends in Chengtu." (Josselyn.)

"For high-grade cabinetwork, picture frames, and the very best furniture, the timber most highly esteemed in Szechwan is the 'Hung-tou Mu,' derived from *Ormosia hosiei*, a tree allied to the Sophora. In the spring *O. hosiei* produces large panicles of white and pink pea-shaped flowers, and at all seasons of the year it is a striking tree. The wood is heavier than water, of a rich red color, and beautifully marked. It is the most high-priced of all local timbers, and is now very scarce. In north central Szechwan it is still fairly common, but on the Chengtu plain it is found only in temple grounds or over shrines. The native name signifies, 'Red Bean tree,' the seeds being red and contained in beanlike pods." (Wilson, A Naturalist in Western China, vol. 11, p. 21.)

Passiflora reflexiflora (Passifloraceae), 54035. From Guayaquil, Ecuador. Collected by Mr. Wilson Popenoe, Agricultural Explorer. An exceedingly attractive ornamental vine, native in Ecuador, with small three-lobed leaves, and bearing in its axils beautiful flowers about an inch in length. These have centers of blue filaments, very striking scarlet reflexed petals, and ashy-yellow sepals, and are succeeded by roundish fruits about three inches in diameter. (Adapted from Cavanilles, Icones et Descriptiones Plantarum Hispania, vol. 5, p. 15.)

"'Granadilla.' This seed was obtained for me by a friend in southern Ecuador, who describes the fruit as superior to that of *P. ligularis* in quality, and of slightly larger size. I have not seen it myself. I understand that the plant is cultivated at altitudes of 2,000 to 5,000 feet, so it probably will not prove to be more frost-resistant than *P. quadrangularis*. The name 'granadilla' is, of course, applied in Latin America to a number of distinct species of Passiflora." (Wilson Popenoe.)

Ribes sp. (Grossulariaceae), 53994. From Ecuador. Collected by Mr. Wilson Popenoe, Agricultural Explorer. "(No. 638a. Hacienda La Rinconada, Ecuador.) Seeds of the wild Andean currant, from the Province of Carchi. Altitude about 11,500 feet.

"A shrub reaching a height of 6 feet, with broadly ovate, subcrenate leaves truncate at the base, serrate and sometimes slightly lobed, and about an inch long. The round, orange-yellow fruits, rarely more than a quarter of an inch in diameter, are borne on axillary racemes about 2 inches long. They are subacid and not very agreeable in flavor and are little used by the inhabitants of the region in which they grow. In general appearance, both of plant and fruit, this species is strikingly suggestive of our cultivated currants. It will be of interest in the United States because of its relationship with the latter, and it may perhaps be used in producing a good variety of currant suitable for regions where our present cultivated sorts will not succeed." (Popenoe.)

Salvia sp. (Menthaceae), 53992. From Ecuador. Collected by Mr. Wilson Popenoe, Agricultural Explorer. "(No. 636a.) Seeds of a handsome blue-flowered Salvia from the mountains between Cayambe and Ibarra, in northern Ecuador, where it grows abundantly at altitudes of 8,000 to 9,000 feet. The plant is slender, and reaches 3 feet in height; the handsome deep blue flowers, about 1 1/2 inches long, are produced in considerable numbers, and make the species worthy of a trial in the United States." (Popenoe.)

Solanum brevifolium (Solanaceae), 53993. From Ecuador. Collected by Mr. Wilson Popenoe, Agricultural Explorer. "(No. 639a.) Seeds of a slender, attractive climbing plant from the Hacienda La Rinconada, in the Province of Carchi (altitude 10,000 to 12,000 feet).

Its leaves are small, and abundantly produced; the flowers are white, star shaped, half an inch broad, and are followed by roundish, deep orange-colored fruits up to an inch long. The slender stems send out adventitious roots, which enable them to cling with security to tree trunks and to large rocks. The species may be useful in California and Florida to cover walls and fences. It is a perennial, and while not a large grower, will probably reach a height of 10 feet at least. Since it grows upon the high 'páramo,' (bleak plateau) it should withstand at least several degrees of frost." (Popenoe.)

Urochloa brachyura (Poaceae), 53957. **Grass.** From Pretoria, Union of South Africa. Seeds presented by Dr. I. B. Pole Evans, Division of Botany. "A native of northwestern Transvaal, where the seed was collected. This grass is always the one most sought after by wild game and domestic animals." (C. V. Piper.)

Notes on Behavior of Previous Introductions.

"*Amygdalus persica*, S.P.I. No. 43134. The tree was planted in 1920, and is now 6 feet high, a very rank grower with conspicuous dark-green foliage. It ripened 25 good-sized, delicious peaches." (Harry Welby, Taft, Calif., Dec. 19, 1921.)

"*Ziziphus jujuba*, S.P.I. No. 22686. This tree was planted in March, 1918. Last year it bore a large crop and this year did better than last, and also produced larger fruit. We cut many scions from the tree, which had the effect of pruning. The result seems to be larger fruit and it raises the question as to whether or not pruning is beneficial. The fruit is excellent in quality and when crystallized or preserved it possesses the true jujube flavor. Our experiments prove that, for processing, the fruit should be picked when it first commences to show brown spots, otherwise the fruit will shrink and the skin become tough. It is excellent for drying. A display of this fruit at the recent Horticultural Exhibit took first prize in competition with fruit grown in other sections. We consider this variety the best of all that we have observed." (George E. Fairhead, manager, Eagle Rock Tropical Garden, Eagle Rock City, Calif., Dec. 22, 1921.)

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"*Abelmoschus esculentus*, S.P.I.No.27810. This has been cultivated carefully two seasons. It is the best form of okra I have ever been able to secure. It is very prolific, drought resistant, remains tender a long time, is very large, has little velvet or fur, remains white when cooked, does not discolor when dried, and is in every respect a superior form. I have distributed 25 packets of seed to gardeners in this county, all of whom find it very desirable. It is well worth some effort to establish.

"*Capsicum annuum*, S.P.I. No. 45665. One hundred plants set in 1921. Remarkably prolific, one plant 18 inches high showing 147 fruits, blossoms, and buds about July 15. Fruit small and not sufficiently fleshy to make a good canning pepper, but flavor excellent; it is much earlier than other sorts, showing red peppers nearly 30 days earlier than the common pimento. Probably of considerable value to plant breeders.

Solanum tuberosum, S.P.I. No. 45023. Purple-skinned Irish potato. Planted February 28,1921, in good situation, not close to other potatoes. Dug first planting July 15. Small production but tubers of good quality. Showed no signs of blight or wilt, and appears not to be severely attacked by potato beetle. Second planting July 20, plants came up and started off well, but produced very little in fall on account of dry weather. This potato is probably of very little value in the south as the season is too long before maturity, and for that reason drought damage will also be more severe." (Wm. A. Slaton, Washington, Ga., Dec. 21, 1921.)

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION
BUREAU OF PLANT INDUSTRY
UNITED STATES DEPARTMENT OF AGRICULTURE

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